

Objection to the Specification

The Examiner has objected to the specification, on the grounds that the term "underware" as a synonym for software is repugnant to the ordinary meaning of the term. While applicants do not agree, and have used "underware" in a way commonly understood in the art, the specification has been amended to delete the term.

Claims Rejections - 35 USC 112

Claims 11-12 and 20 stand rejected as being indefinite. This rejection is addressed by amendment of these claims.

Claims Rejections - 35 USC 102

Claims 1, 2, 13, 15, 17, 26 and 28-30 stand rejected as being anticipated by Nguyen et al. ("Nguyen"). The rejection is respectfully traversed on the ground that the reference does not describe each element of the rejected claims.

Nguyen is cited as describing a replaceable sled carrying a wiper for servicing a printhead. The sled is replaced if the wiper wears out.

Claim 1 as amended recites a method for servicing an inkjet printer including an inkjet printhead with a nozzle plate and a first service module removably installed on the printer, comprising:

identifying a printhead-related service condition not adequately addressed by servicing the printer with the first service module in an un-used condition;

providing a second service module with a service function different from the first service module and adapted to address said printhead-related service condition.

Claim 17 as amended is drawn to a method for servicing an inkjet printer including an inkjet printhead and a removable first service module, comprising:

providing a second service module different from the first service module and adapted to address a printhead-related service condition not adequately addressed by the first service module in an unused condition; and

installing the second service module in the printer;

conducting a printhead-related service operation using the second service module.

The Nguyen reference does not describe each of the foregoing claim limitations, since the discussion in Nguyen concerns replacement of worn parts.

Claim 28 is drawn to an inkjet printing system, comprising:

an inkjet printhead;  
a service area for performing service functions on the printhead;  
a first service module for removable mounting at the service area to perform service functions on the printhead during a standard printhead service mode;

a second service module for removable mounting at the service area in place of the first service module to perform a different service function on the printhead during a special printhead service mode.

Nguyen does not disclose the last element of Claim 28, since the reference does not teach a second service module to perform a different service function on the printhead during a special printhead service mode. The replacement sled of Nguyen is used in the standard printhead service mode, and not in a special service mode, since its purpose is replacement of a worn wiper.

Claim 30 as amended is drawn to a special service module for use in an inkjet printing system including an inkjet printhead and a standard service module removably installed in the printing system, the special service module configured to be removably installed in the printing system in place of the standard service module to perform a special service function on the printhead which is not performed by the standard service module in an unused condition. The invention of Claim 30 is not disclosed by Nguyen, since the description is to replace a sled with a worn wiper.

The rejection under Section 102 should be withdrawn.

#### Claims Rejections - 35 USC 103

Claims 3-4, 9, 18 and 21 stand rejected as being unpatentable over Nguyen. This rejection is respectfully traversed, on the grounds that a prima facie case of obviousness has not been established, since Nguyen does not teach or suggest all elements of the base claim, as discussed above, and

because Nguyen does not teach or suggest the limitations of these rejected base claims.

The allegation of Official Notice is disputed. There is no reason to supply a set of instructions for use of a replacement part, which replaces a worn part, since the use of the replacement part would presumably be identical to use of the replaced part. If the Examiner maintains the allegation of Official Notice, he is respectfully requested to supply a reference which meets the claim limitations.

Claims 5-6, 11, 22 and 24 stand rejected as being unpatentable over Nguyen in view of Johnson et al. ("Johnson"). This rejection is respectfully traversed on the grounds that a prima facie case of obviousness has not been established, since Nguyen does not teach or suggest all elements of the base claim, as discussed above, and because Nguyen does not teach or suggest the limitations of these rejected base claims.

Applicants respectfully disagree with the Examiner's recitations of teachings of Johnson. The statement in the abstract that the service module has an optional solvent applicator in addition to a wiper and a cap does not imply or suggest that the same printer would use at different times a service module without a solvent applicator and a different service module with a solvent applicator. The Examiner holds that it would have been obvious to remove the sled in Nguyen and provide and use a second module which performs a special printhead-related servicing operation, such as a solvent application, in response to ink accumulation on the nozzle plate because the provision of the second module would facilitate performing the special servicing, such as dissolving the ink residue on the printhead, including the nozzle plate, thereby improving print quality. Applicants respectfully disagree with this holding, on the ground that the holding is the product of improper hindsight reconstruction, using applicants' specification to provide the teachings missing from the applied references.

As the Federal Circuit has recognized, most if not all inventions are combinations and mostly of old elements, and so an examiner can often find each element of a claimed invention in the prior art. Of course, if identification of each claimed element in the prior art were sufficient to negate patentability, very few patents would issue. Rejecting patents solely by finding corollaries of the claimed elements in the prior art would permit an examiner to use the claimed invention as a blueprint for piecing together elements in the prior to

defeat patentability. To prevent the use of hindsight based on the invention to defeat patentability, the examiner is required to show a motivation to combine the references used to create the case of obviousness. Thus, the examiner must show reasons that the skilled artisan, confronted with the same problems as the inventor and with no knowledge of the claimed invention, would select the elements from the cited prior art references for combination in the manner claimed. In re Rouffet, 47 USPQ 2d 1453, 1458 (Fed. Cir. 1998).

Measuring a claimed invention against the standard established by 35 USC 103 requires the critical step of casting the mind back to the time of invention, to consider only the thinking of one of ordinary skill in the art, guided only by the prior art references and the then-accepted wisdom in the art. The case law of the Federal Circuit makes clear that the best defense against the subtle but powerful attraction of a hindsight-based obviousness analysis is rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references. Evidence of a suggestion, teaching or motivation may flow from the prior art references themselves, the knowledge of one of ordinary skill in the art, or in some cases, from the nature of the problem to be solved. The range of sources available, however, does not diminish the requirement for actual evidence. The showing of such actual evidence must be clear and particular. Broad conclusory statements regarding the teaching of multiple references, standing alone, are not evidence. The required showing of evidence should include particular factual findings. In re Dembiczak, 50 USPQ 2d 1614, 1617 (Fed.Cir. 1999).

Here, there is no teaching found in the applied references which would lead one of ordinary skill to the invention of Claims 5-6, 11, 22 and 24. The suggestion to combine references in the manner set out in the office action is found only in applicants' specification. The rejection should be withdrawn.

The Examiner further alleges that, with regard to removing the second module and installing the first module after completion of the special operation, apparently addressing Claims 6 and 22, that:

it is clear that modules in Nguyen et al. may be exchanged at any desired time. As there are no unexpected results in the removal of the second module and installation of the first module after completion of the special operation, it would have been obvious ... to remove the second module

and installing the first module after completion of the special operation at any desired time, such as when the special operation is no longer deemed to be required or at a time the second module no longer functions, because such operation would facilitate operation of the Njuyen et al. apparatus in a desired manner.

These allegations are respectfully traversed, on the grounds that they are the product of prohibited hindsight reconstruction, and are contrary to the teachings of the references. Nguyen is cited as disclosing replacement of a sled with worn wipers. Why would a printer user replace a sled which has a worn wiper with a sled with a new wiper, and then later remove the sled with the new wiper and reinstall the first sled with the worn wiper? The allegations are based on teachings found only in applicants' specification.

Johnson provides no teaching of providing two service modules for use in the printer as in Claim 1. Since neither Nguyen nor Johnson teach or suggest the invention of Claim 1, the inventions of Claims 11 and 24 are not taught or suggested by the applied references.

Claims 7 and 19 stand rejected as being unpatentable over Nguyen in view of Childers et al. ("Childers"). This rejection is respectfully traversed, on the grounds that a prima facie case of obviousness has not been established, and the references do not teach or suggest the claimed invention of these claims.

Differences between Claims 1, 17 and Nguyen have been discussed above regarding the Section 102 rejection. Childers does not supply the teachings missing from Nguyen regarding the base claims as discussed above. The printer instruction code discussed at column 6, lines 24-30 provides different subroutines for operating the same service station, not for using a second service module with a service function different from a first service module.

Claims 8 and 20 stand rejected as being unpatentable over Nguyen in view of Childers and Russell. This rejection is respectfully traversed, on the grounds that a prima facie case of obviousness has not been established, and the references do not teach or suggest the claimed invention.

Differences between Claims 1, 17 and Nguyen have been discussed above regarding the Section 102 rejection. Childers does not supply the teachings missing from Nguyen regarding the base claims and Claims 7 and 19

as discussed above. Russell describes downloading techniques, but does not provide the teachings missing from Nguyen and Childers.

Claims 10 and 23 stand rejected as being unpatentable over Nguyen in view of Johnson and Miller. This rejection is respectfully traversed, on the grounds that a *prima facie* case of obviousness has not been established, and the references do not teach or suggest the claimed invention.

Differences between base Claims 1, 17 and Nguyen have been discussed above regarding the Section 102 rejection. Applicants respectfully disagree with the Examiner's recitations of teachings of Johnson. The statement in the abstract that the service module has an optional solvent applicator in addition to a wiper and a cap does not imply or suggest that the same printer would use at different times a service module without a solvent applicator and a different service module with a solvent applicator. Miller describes a brush for cleaning a nozzle plate, but otherwise does not address the teachings missing from the applied references described above regarding Claims 1 and 17.

Claims 12 and 25 stand rejected as being unpatentable over Nguyen in view of Johnson and Terasawa et al. ("Terasawa"). This rejection is respectfully traversed, on the grounds that a *prima facie* case of obviousness has not been established, and the references do not teach or suggest the claimed invention.

Differences between base Claims 1, 17 and Nguyen have been discussed above regarding the Section 102 rejection. Applicants respectfully disagree with the Examiner's recitations of teachings of Johnson. The statement in the abstract that the service module has an optional solvent applicator in addition to a wiper and a cap does not suggest that the same printer would use at different times a first service module without a solvent applicator and a second service module with a solvent applicator. Terasawa teaches a rubber block.

The Examiner holds that it would have been obvious to provide a second service module including a textile wiper in addition to a cap and blade-type wiper in response to ink accumulation on the nozzle plate in Nguyen because the provision thereof would enable always providing stable ink discharge easily and reliably. Applicants respectfully disagree. There is no teaching or suggestion to provide such a "second" service module; such teaching is found only in applicants' specification.

Claims 14 and 27 stand rejected as being unpatentable over Nguyen in view of Shibata. This rejection is respectfully traversed, on the grounds that a prima facie case of obviousness has not been established, and the references do not teach or suggest the claimed invention.

Differences between base Claims 1, 17 and Nguyen have been discussed above regarding the Section 102 rejection. Claims 14 and 27 are allowable for reasons similar to those discussed above regarding Claims 1 and 17.

Claim 16 stands rejected as being unpatentable over Nguyen in view of Nystrom et al. ("Nystrom"). This rejection is respectfully traversed, on the grounds that a prima facie case of obviousness has not been established, and the references do not teach or suggest the claimed invention.

Differences between base Claims 1, 17 and Nguyen have been discussed above regarding the Section 102 rejection. Nystrom discloses a cap which engages against a resilient seal on the printhead. The applied references do not teach or suggest the invention of Claim 16 for reasons similar to those discussed above regarding the base claim.

#### New Claims

New Claims 31-33 have been added. Claim 31 is drawn to the subject matter of original Claim 6. This claim is allowable for reasons discussed above regarding the Nguyen reference. There is no teaching or suggestion in the reference to provide a servicing method as recited in Claim 31. Nguyen describes a replacement sled to replace a sled with a worn wiper; there is no teaching to re-install the original sled after performing a service function with the replacement sled.

Claims 32-33 depend from Claim 16, and further define the method recited therein. These claims are fully supported by applicants' specification, e.g. in the paragraph bridging pages 14-15.

CONCLUSION

The outstanding objections and rejections have been addressed, and the application is in condition for allowance. Such favorable reconsideration is solicited.

Respectfully submitted,



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**VERSION WITH MARKINGS TO SHOW CHANGES MADE  
IN THE SPECIFICATION**

The paragraph bridging pages 11-12 has been amended to the following:

Some examples of these special service modules are now described. One problem which might arise is the degradation in print quality from fiber tracks on the print medium, resulting from fibers landing on the pen, typically the nozzle array and surrounding area. A special service module can be designed, which includes a brush to remove the fibers from the pens. An exemplary special service module 230A is shown in the simplified side view of FIG. 6. This printhead includes a brush 230A1 comprising a plurality of resilient bristles, in place of a set of elastomeric wipers. The tips of the brush bristles are positioned, when the cleaner 230A is installed in the service station carriage, to contact the nozzle array and surrounding area of a printhead during a special cleaning cycle, and thereby remove the fibers and other debris. The service module 230A can also include a second, removable brush 230A2, which is removed for the printhead cleaning procedure just discussed. The purpose of the second brush 230A2 is discussed below. The special service module 230A can be accompanied by software [(underware)] which is loaded into the printer controller, to instruct the printer how to use the special service module, and particularly a cleaning mode to provide relative motion between the brush and the printhead nozzle array. This software could be provided in the form of a storage media such as a floppy disk, and can be packaged with the service module 230A for sale or shipment to the customer or end user. Alternatively, the software can be maintained on a remote server, and downloaded by the user.

The paragraph at page 9, lines 14-21 has been amended to the following:

In accordance with one aspect of the invention, the design of a service station module for a fielded printer, e.g. printhead cleaner 230,

is modified to adapt it to new failure modes. The modified service station module is then sent to the printer user, together with a printer's code procedure to activate the new module (sequence of printer commands [(underware]) that will adapt the printer service routines to make use of the new service station module).

IN THE CLAIMS

1. (Amended) A method for servicing an inkjet printer including an inkjet printhead with a nozzle plate and a first service module removably installed on the printer, comprising:

identifying a printhead-related service condition not adequately addressed by servicing the printer with the first service module in an un-used condition;

providing a second service module with a service function different from the first service module and adapted to address said printhead-related service condition.

11. (Amended) The method of claim 1, wherein said printhead-related service condition includes ink accumulation on the nozzle plate, and wherein the second [printhead cleaner] service module includes a wiper or applicator having applied thereto a cleaning fluid for removing the ink accumulation.

12. (Amended) The method of claim 1, wherein said printhead-related service condition includes ink accumulation on the nozzle plate, and wherein the second [printhead cleaner] service module includes a wiper fabricated of silicon, or a textile, or a special rubber for removing the ink accumulation.

17. (Amended) A method for servicing an inkjet printer including an inkjet printhead and a removable first service module, comprising:

providing a second service module different from the first service module and adapted to address a printhead-related service condition not adequately addressed by the first service module in an unused condition; and

installing the second service module in the printer;

conducting a printhead-related service operation using the second service module.

20. (Amended) The method of claim [18] 19 wherein the printer is controlled by a host computer, and wherein the step of using the set of instructions includes downloading the set of printer instruction code from the host computer.

30. (Amended) A special service module for use in an inkjet printing system including an inkjet printhead and a standard service module removably installed in the printing system, the special service module configured to be removably installed in the printing system in place of the standard service module to perform a special service function on the printhead which is not performed by the standard service module in an unused condition.